Shared Programming Experience for Programming Assignment (CMP103) Fall Semester at International Open University

From an early age I've always been deeply interested in computing. It was my dad, introducing me to the computer systems at his work place that first sparked this interest. I can always remember the feeling of wanting to know just how computers worked, why they worked and what else they could do.

This interest never left me, only growing more profound and passionate with every new discovery I made. From communicating with an artificial intelligence to seeing the wonders of the Internet for the first time, computers have left me fascinated with just how much power yet mystery they hold.

The A-Levels I chose to study have all helped me to develop both myself and my understanding of the subject. Physics for example has helped me to understand how certain parts of a computer function, while Computing has given me a greater insight into the business aspects of the computer industry.

Chemistry and Physics have both helped to improve my analytical and evaluative skills. Within maths I have been lucky enough to have a teacher who was very interested in computer science. He has been especially helpful, lending me books such as Gödel, Escher, Bach: an Eternal Golden Braid. This has given me an insight into the richness that is computer science.

My interest in computing has not been restricted to the classroom and college life. Within the last twelve months I've used the knowledge that I've gained over the past twelve years together with the help of my family to set up my own computer related business. This has given me a totally new perspective on how certain things function, and how business operates.

The writing of a business plan was a totally alien experience for me, but over the course of 9 months I researched and planned, and finally when the plan was complete I was rewarded with the satisfaction of knowing that I had completed something that most people would never have the chance to do especially at my age.

Through the setting up of the company and its subsequent running I have learnt many things. These include how to balance tasks effectively, how critical teamwork can be and how to delegate tasks to get the job done quickly and efficiently.

As well as spending time both studying and helping to run the business I understand the importance of having time to relax. One of my hobbies that I try to make time for is learning to fly, and gaining my private pilots license.

s a child I dreamed of becoming a pilot and luckily its one dream that I've managed to follow. I love the freedom that flying gives you and the control that you have when in the air. Training for my private pilots license (PPL) has also involved me taking onboard a lot of responsibility for the safety of those onboard, and those around the aircraft.

From ensuring that I carry out the pre-flight checks correctly, and knowing what's around you both while you're on the ground and in the air to ensuring that I'm prepared for any eventuality.

I also enjoy both playing and watching tennis. I've played in various competitions before, and have helped to umpire junior matches at my club. To ensure that I can fit everything in I've had to develop very good time management, prioritising what I need to do efficiently.

I'm looking forward with great anticipation to the challenges that studying for a degree in computer science will bring at this prestigious institution IOU.

Programming Languages

It may seem daunting to learn a programming language from scratch having never done it before, but many people find that once they become proficient at one programming language, it is much easier and faster to learn others. Hackers not only have to understand programming languages to be able to exploit software vulnerabilities, but many hackers need to write their own code to be able to execute a particular attack. Reading, understanding, and writing code is fundamental to hacking. Programming languages range from very obscure machine code, which is in binary and hexadecimal format and is used to communicate directly with a processor, to high-level object-oriented languages that are used for software development. Common high-level object-oriented languages are C++ and Java. The code written in high-level languages is compiled into the
appropriate machine code for a particular processor, which makes high-level languages very portable between different types of machines. Another category is a scripted language, where commands are executed line-by-line instead of being compiled into machine code. Learning programming languages takes time and practice - there is no other way to become proficient. Long evenings and overnight marathons of writing, debugging, and recompiling code are a common rite-of-passage among
beginning hackers.

Networking and Protocols

One of the most important subjects for the aspiring hacker to study is that of network architecture and protocols. Computers can be networked in many different configurations and sizes, and with different technologies that govern
their interconnection. From copper wire, to fiber optics, to wireless and satellite connections, as well as combinations of all of these media, we have built a vast network of computers across the globe. This network can be understood in its entirety on a large scale as well as viewed as a connection of smaller self-contained networks. In terms of size, computer networks have been traditionally categorized as Local Area Networks (LAN) and Wide Area Networks (WAN). WANs typically connect multiple LANs. There are multiple other designations for different sizes of networks, and the terminology is always changing as new
technologies and conductivities develop. Keeping up with these changes is one of the ongoing tasks of a hacker.Networks also have different architectures. The architecture is determined not only by the configuration

of the different nodes but also on the medium that connects them. Originally, networked computers were always connected by copper wire. Commonly used copper network cables, often known as Ethernet cables, consist of twisted pairs of copper wire. Although the most common of these cables is the category five, or CAT-5, cable, it is beginning to give way to a new standard, CAT-6, which has a greater capacity for transmission of signals. For very high speed applications and longer distances, fiber-optic cables are usually chosen. Fiber optics use light instead of electricity and have a very high capacity for carrying information. They are used to carry most modern cable television and high speed internet services. Fiber optics serve as the backbone for the internet. Within smaller areas, wireless networks are very common. Using a Wireless Fidelity (Wi-Fi) protocol, wireless networks exist in a large number of personal, private, and commercial LANs. Hackers are often particularly interested in hacking into Wi-Fi networks, resulting in the evolution of Wi-Fi security standards. Regardless of the architecture or medium of transmission, when two terminals are communicating across a network they must do so using a common set of rules known as a ***protocol***. Networking protocols have evolved since the first computer networks were created, but they have retained the same basic layered approach. In general, a network is conceptualized in terms of different layers that perform different functions. This is also known as a ***stack***. The most common communication protocols used today are the Internet Protocol (IP) and Transmission Control Protocol (TCP). Taken together, these are commonly known as ***TCP/IP***. These protocols change and are standardized on occasion. It is critical for the hacker to learn these protocols and how they relate to communication between the different layers of the stack. This is how hackers can gain higher and higher levels of access to a system.

STUDENT NAME: AMINU MUHAMMAD AUWAL
STUDENT ID: ST10138019
COURSE NAME/CODE: PROGRAMMING FUNDAMENTALS (CMP103)
ASSIGNMENT QUESTION:

You have decided to organize a fund-raising activity to help your local community in thisPandemic. You will be offering a short ‘how to use basic excel’ course to your local masjidcommunity. The course will be delivered online via Zoom. The short course will cost only $10 per participants. You can only accommodate 10 students per session. Depending

on the demand forthe course, you will have more than 1 session if required.

All the proceeds will go towards helpingthe community in partnership with

the local masjid. You have also decided to match the fundsraised **equally** as

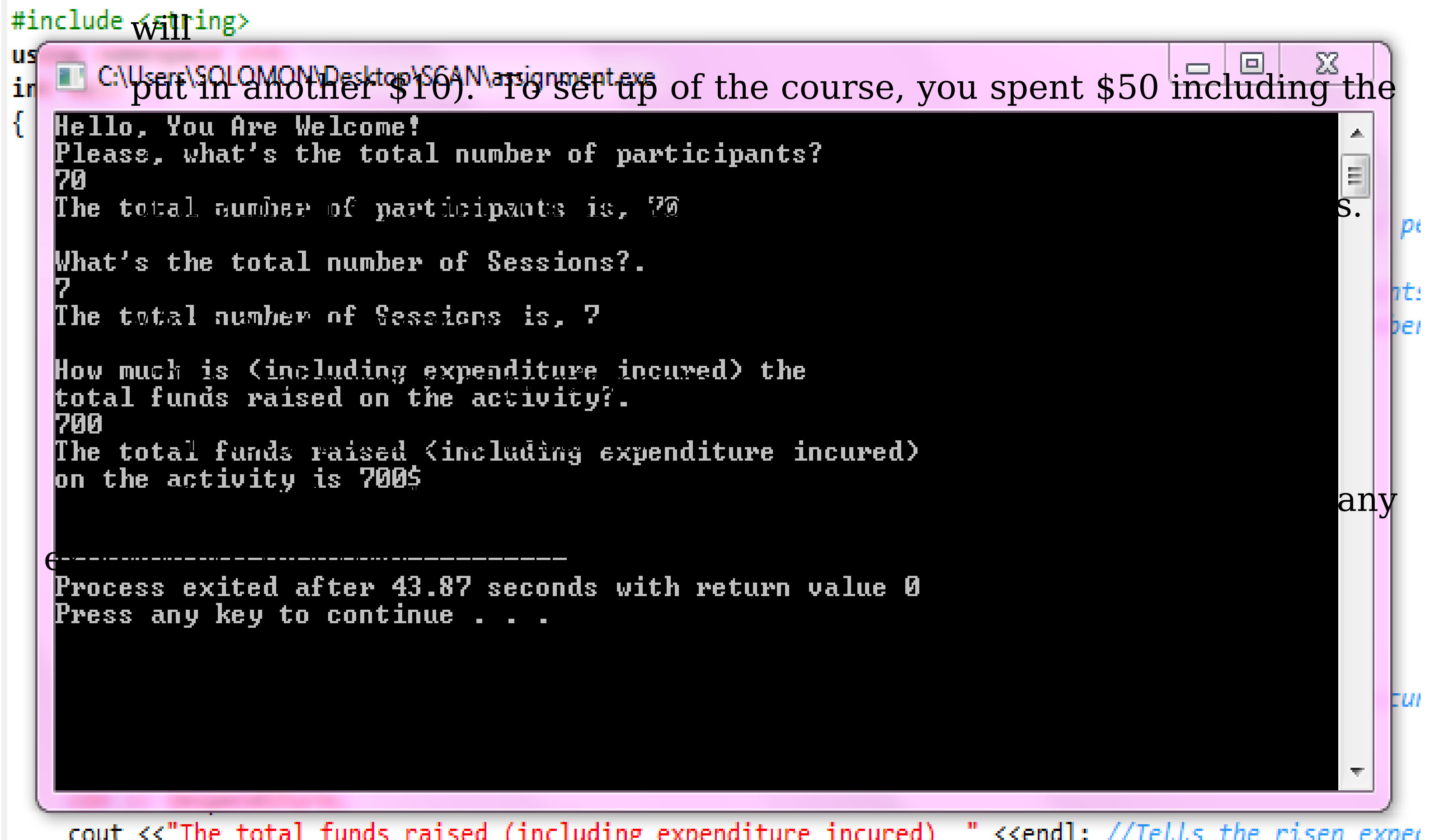
another way to help your community (for example for if $10 is raised, you will

put in another $10). To set up of the course, you spent $50 including the

s.

any

e



```
Hello, You Are Welcome!
Please, what's the total number of participants?
70
The total number of participants is, 70

What's the total number of Sessions?.
7
The total number of Sessions is, 7

How much is (including expenditure incured) the
total funds raised on the activity?.
700
The total funds raised (including expenditure incured)
on the activity is 700$


--------------------------------
Process exited after 43.87 seconds with return value 0
Press any key to continue . . .
```

```
#include <string>
us
in
{
  cout <<"The total funds raised (including expenditure incured)  " <<endl; //Tells the risen expe
```

```
//Bismillahirrahmanirrahim
//An assignment to write a program from IOU by Aminu MuhammadAuwal
#include <iostream>
#include <string>
using namespace std;
int main ()
{

        cout <<"Hello, You Are Welcome! " <<endl;                       //Displayes a welcome message
        cout <<"Please, what's the total number of participants? " <<endl;      // Ask the total number of perticipants
        int nparticipants;                                              //Stores value npartticipants on variable int
        cin >> nparticipants;                                           //Request users data for total number of perticipants
        cout <<"The total number of participants is, " << nparticipants;        //Prints the total number of participant
        cout <<" \n" <<endl;                                            //Adds a line/create new empty line.


        cout <<"What's the total number of Sessions?. " <<endl;         //Displays question
        int nsessions;                                                  //Stores the value "nsessions" on vairable “int”
        cin >> nsessions;                                               //
        cout <<"The total number of Sessions is, " << nsessions;        //
        cout <<" \n" <<endl;                                            //


        cout <<"How much is (including expenditure incured) the " <<endl;       //Asks the expenditure inccured
        cout <<"total funds raised on the activity?. " <<endl;                  //Displays question
        int nexpenditure;                                          //Stores the data on Variable
        cin >> nexpenditure;
        cout <<"The total funds raised (including expenditure incured)  " <<endl; //Tells the risen
expediture
        cout <<"on the activity is " << nexpenditure;
        cout <<"$ ";                                               //Adds the Doller Sign ($) to the
rice
        cout <<" \n" <<endl;
        return 0;                                                  //Ends the Program
}
//Thank You.
```